

Hypertension prevalence jointly influenced by acculturation and gender in U.S. immigrant groups

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Abstract:

BACKGROUND: Latinos and Asians in the United States are disproportionately burdened by hypertension, a leading risk factor for cardiovascular disease. Few studies have used multicomponent measures of acculturation to compare cardiovascular risk factors across immigrant-origin groups. Additionally, little is known about how acculturation and gender shape hypertension risk among immigrants.

METHODS: We created an acculturation score composed of language use, nativity, and years in the United States and fit separate race/ethnicity log-binomial models examining associations with hypertension prevalence ($\geq 130/80$ mm Hg) among Latino ($n = 4,267$) and Asian ($n = 2,142$) National Health and Nutrition Examination Survey 2011–2016 participants aged 18+. Joint effect models tested the concept of “intersectionality” between acculturation and gender.

RESULTS: Adjusting for age, gender, and socioeconomic position, Latinos and Asians with high acculturation were 25% and 27% more likely to have hypertension, respectively, compared with low acculturation groups. Latino and Asian American men with high levels of acculturation were 74–79% more likely to have hypertension compared with women with low acculturation (adjusted prevalence ratios (aPR) for Latinos = 1.74, 95% confidence interval (CI): 1.49–2.03; aPR for Asians = 1.79, 95% CI: 1.42–2.25). The gradient of increasing hypertension with increasing acculturation was most apparent among Latino men (adjusted risk differences (aRD) = 12.0%, $P < 0.001$) and Asian women (aRD = 14.0%, $P = 0.003$) and nonsignificant among Latino women and Asian men when comparing high vs. low acculturation categories.

CONCLUSIONS: Our results correspond with prior literature demonstrating increased morbidity among immigrants with increasing acculturation but also suggest differing patterns by

race/ethnicity and gender. Future research should explore how migration processes differentially influence hypertension among men and women.

Keywords: acculturation | Asian | blood pressure | hypertension | immigrant health | Latino

Article:

Hypertension affects more than a third of the US population¹ and is a leading risk factor for cardiovascular disease.² Additionally, national campaigns such as Million Hearts³ and Healthy People 2020⁴ have prioritized reducing hypertension among the US population overall and disparities by race/ethnicity. Latinos and Asian Americans, specifically, are disproportionately burdened by hypertension and are the fastest growing population subgroups nationally,⁵ making the identification of risk factors in these populations a public health priority.

Acculturation is one social determinant that may influence cardiovascular disease risk factors among Latino and Asian American adults. Although a complex and dynamic process, acculturation is generally defined as the process through which immigrants adapt to a new country's norms, attitudes, and practices.⁶ A large body of research has investigated how acculturation proxies such as nativity, English language proficiency, and length of stay are associated with morbidity and mortality in immigrant-origin populations, although more extensively among Latinos.^{7,8} Studies focused on hypertension published in the last decade have shown that in the United States, increasing acculturation, measured with varying proxies, is associated with greater risk for hypertension in both Latinos and Asian Americans.^{9–14} Nearly, all of these studies have examined acculturation proxies separately,^{9–11,13,14} however, and few have used a multi-item scale of acculturation that can be used across immigrant groups with varying migration patterns. Only 1 study of which we are aware has used an acculturation score comprised of 4 variables and found that increasing acculturation was associated with greater risk for hypertension¹² but did not examine whether this association holds across immigrant groups.

Moreover, a burgeoning body of public health research has called for an “intersectional” lens¹⁵ to understand the synergistic ways in which socially defined determinants shape the health of populations.¹⁶ Briefly, intersectionality theory posits that individuals hold multiple social positions in modern societies, with any single social factor rarely operating independently of the other.¹⁵ Race/ethnicity and gender are 2 such social categories that are underpinned by unequal power relationships that can work in conjunction with immigration-related processes to produce inequality in health.¹⁶ A small body of literature suggests that acculturation experiences may differ for men and women,¹⁷ and the results of select studies examining whether the association between acculturation and hypertension differs by gender have been mixed.^{9,12,14} Furthermore, these studies offer no comparisons across race/ethnicity, although research has shown that experiences of integration into US society differ across immigrant-origin populations,^{16,18,19} due to varying baseline levels of socioeconomic position (SEP), immigration policies, and racialization experiences in the US context.¹⁶

Our study is one of the first to use a contemporary, nationally representative sample of Latino and Asian Americans to examine the intersection of acculturation proxies, race/ethnicity, and gender on hypertension prevalence. Given the varying migration patterns for these 2 groups and

differences in English language exposure, we use a multi-item acculturation scale that includes nativity, length of time in the United States, and language use at home. We hypothesize that higher acculturation proxy scores will be associated with increased hypertension prevalence overall, with a stronger association evident among women compared with men among both Latinos and Asians.

METHODS

Study population

The study population includes respondents from the 2011–2016 waves of the National Health and Nutrition Examination Survey (NHANES). NHANES is a cross-sectional nationally representative survey of the noninstitutionalized US civilian population employing a complex, multistage stratified probability cluster sample design.²⁰ The analytic sample in our study includes individuals who identified as Hispanic/Latino (Latino herein) or of Asian origin (Asian herein) who were 18 years of age or older ($n = 6,409$).

Measures

Hypertension. Blood pressure readings were taken during the examination component of NHANES. The average of the final 2 measurements served as the blood pressure value. Hypertension status was based on criteria defined by the Centers for Disease Control and Prevention¹ and updated guidelines published in 2017 by The American College of Cardiology and The American Heart Association.²¹ A respondent was classified as having hypertension if they had (i) an average systolic blood pressure ≥ 130 mm Hg or (ii) an average diastolic blood pressure ≥ 80 mm Hg or (iii) self-reported current use of prescribed antihypertensive medication.

Acculturation proxy scale. We created a composite acculturation proxy score ranging from 0 to 5 based on Kandula *et al.*²² that incorporated nativity, length of residence in the United States, and language spoken at home. First, we created a variable describing nativity and years in the United States. Respondents born in the United States were given a value of 3. Those born outside of the United States who lived in the United States 20+ years were given a value of 2. Respondents born outside of the United States who lived in the United States 10–19 years were given a value of 1 and those who lived in the United States less than 10 years were given a value of 0. Second, we created a variable describing language spoken at home. Respondents who spoke mostly English at home were given a value of 2. Respondents who spoke English and Spanish or another language at home equally were given a value of 1. Respondents who spoke mostly Spanish or another language at home were given a value of 0. The values of the nativity/years in the United States and the language variables were summed to form an acculturation proxy score ranging from 0 to 5, with higher values representing greater acculturation. Finally, we created a 3-level categorical variable that approximated empirically derived cutoffs of the acculturation score, taking sample size and comparability across the 2 groups into account. Latino and Asian American individuals with scores of 0–1, 2–3, and 4–5 were classified as having “low,” “medium,” and “high” acculturation, respectively.

Race/ethnicity. Participants self-reported race/ethnicity. Latinos self-identified as Latino irrespective of race, while Asian Americans self-reported Asian American as their racial category.

Covariates. Analyses adjusted for age (18–29, 30–39, 40–49, 50–64, 65+), gender (male/female), income (<\$25,000, 25,000–74,999, ≥75,000), education (college or more, some college, high school, less than high school), marital status (yes/no), and health insurance status (yes/no public or private health insurance). Although body mass index (BMI) is conceptually on the pathway between acculturation and hypertension, BMI (<25, 25–29.99, ≥30) was also included because it is a strong predictor of hypertension.

Statistical analysis

Descriptive statistics were generated for all variables by racial/ethnic group, and all analyses included weights that adjusted for the complex sampling design of NHANES and multiple years of data merged. To assess the association between acculturation categories and hypertension, log-binomial regression models were fit to estimate prevalence ratios (PR) and PR adjusted for relevant covariates (aPR) for each racial/ethnic group separately. Model 1 represents the unadjusted association between acculturation proxy categories and hypertension among Latinos and Asians. Model 2 adjusted for age and gender. Model 3 additionally adjusted for income, education, marital status, and health insurance status (as measures of SEP). Model 4 additionally adjusted for BMI.

We tested for interaction effects by examining if being jointly exposed to high acculturation and being male were associated with increased hypertension prevalence, more than what would be expected if each of these social factors acted independently.²³ First, we entered a cross-product term between acculturation and gender to determine whether differences in hypertension prevalence by these 2 social categories were statistically significant, in models adjusted for age, income, education, marital status, and health insurance. Second, we created a variable that categorized individuals according to their acculturation score (3 levels) and gender (male/female) using low acculturation females as the referent (group with the lowest risk) within each racial/ethnic group. Finally, we used predicted probabilities generated from models with the cross-product term to graphically examine trends in hypertension prevalence by acculturation proxy category and gender for Latinos and Asian Americans and calculated adjusted risk differences (aRD) for comparisons of interest. All statistical tests were 2-sided at the 5% significance level. Analyses were performed using SAS version 9.4 (Cary, NC) and SAS-callable-SUDAAN version 11.0.1 (Research Triangle Institute, NC), which uses Taylor Series Linearization to obtain SE to account for the complex sampling design.²⁴ The City University of New York Graduate School of Public Health and Health Policy Institutional Review Board deemed this study exempt given the data were deidentified.

RESULTS

Latinos

Table 1. Sample characteristics by race/ethnicity and gender: National Health and Nutrition Examination Survey (NHANES), 2011–2016

	Latinos (<i>N</i> = 4,267 ^a)		Asians (<i>N</i> = 2,142 ^a)	
	Men	Women	Men	Women
	<i>N</i> (weighted %) = 1,984 (49.6%)	<i>N</i> (weighted %) = 2,283 (50.4%)	<i>N</i> (weighted %) = 1,049 (46.4%)	<i>N</i> (weighted %) = 1,093 (53.6%)
Nativity/years in the United States				
<10	207 (12.9%)	234 (12.2%)	282 (28.6%)	285 (26.8%)
10–19	338 (21.4%)	384 (19.9%)	212 (20.7%)	240 (21.8%)
≥20	595 (23.8%)	656 (24.2%)	384 (36.0%)	412 (38.0%)
Born in the United States	750 (41.9%)	910 (43.7%)	159 (14.7%)	152 (13.4%)
Language at home				
More English	585 (32.2%)	748 (35.7%)	341 (33.2%)	377 (35.2%)
Both equally	295 (15.1%)	358 (15.5%)	91 (8.9%)	91 (8.3%)
More Spanish or other	1,090 (52.7%)	1,165 (48.8%)	613 (57.9%)	622 (56.5%)
Acculturation proxy score				
0	194 (12.0%)	218 (11.3%)	229 (23.0%)	232 (21.7%)
1	287 (18.1%)	320 (16.2%)	165 (16.0%)	176 (15.9%)
2	465 (18.4%)	504 (19.0%)	264 (24.8%)	273 (25.3%)
3	223 (11.8%)	237 (10.2%)	108 (10.6%)	108 (9.6%)
4	246 (12.7%)	277 (12.2%)	137 (13.5%)	172 (16.2%)
5	461 (27.0%)	616 (31.1%)	130 (12.1%)	125 (11.3%)
Age (years)				
18–29	454 (30.4%)	529 (28.7%)	260 (23.6%)	229 (21.2%)
30–39	337 (23.8%)	366 (22.6%)	187 (21.7%)	221 (21.0%)
40–49	306 (19.4%)	390 (20.1%)	203 (20.7%)	226 (21.8%)
50–64	545 (18.9%)	581 (18.2%)	247 (21.0%)	250 (21.0%)
65+	342 (7.5%)	417 (10.4%)	152 (13.0%)	167 (15.0%)
Marital status				
Married	1,105 (54.7%)	991 (47.3%)	682 (68.4%)	701 (66.8%)
Education				
Less than high school	834 (41.8%)	910 (39.0%)	151 (13.8%)	171 (15.3%)
High school	398 (22.7%)	424 (20.2%)	137 (12.7%)	144 (12.9%)
Some college	410 (23.8%)	538 (27.8%)	186 (18.0%)	223 (21.7%)
College graduate or more	210 (11.7%)	249 (13.0%)	521 (55.5%)	507 (50.1%)
Income				
0 to \$24,999	601 (30.0%)	773 (34.8%)	162 (14.8%)	178 (15.9%)
\$25,000 to \$74,999	883 (50.4%)	977 (47.2%)	391 (39.5%)	388 (38.3%)
\$75,000 and above	340 (19.6%)	348 (18.0%)	411 (45.7%)	444 (45.8%)
Public or private health insurance				
Yes	1,243 (56.7%)	1,559 (63.7%)	864 (83.2%)	932 (86.7%)
Body mass index				
Low to normal (<25)	408 (20.9%)	518 (24.2%)	563 (53.2%)	694 (64.1%)
Overweight (25–29.99)	786 (38.7%)	674 (29.9%)	371 (35.7%)	250 (22.8%)
Obese (≥30)	764 (40.4%)	1,060 (45.9%)	106 (11.1%)	135 (13.1%)
Hypertension				
Yes	903 (39.1%)	887 (31.7%)	435 (43.0%)	362 (34.3%)

^aDue to missing data, the *n* and % values may not add to total sample size.

Sample characteristics are described in Table 1. The mean age of Latinos was 40.5 (SE = 0.44), over half were married (51.0%), and approximately 40% had earned less than a high school education. A large percentage of Latinos were born in the United States (41.0%) and spoke more Spanish than English at home (50.7%). Among Latinos, 41.4% scored a 4 or 5 on the

acculturation scale (range 0–5). Hypertension prevalence was higher in Latino men (39.1%) than women (31.7%).

Table 2 displays the probability of having hypertension in crude and adjusted models by acculturation categories among Latinos. In unadjusted models, Latinos with high acculturation were 28% more likely than Latinos with low acculturation to have hypertension (PR = 1.28, 95% confidence interval (CI): 1.15–1.42). This effect size remained substantively similar after adjusting for age, gender, and SEP (aPR = 1.25, 95% CI: 1.13–1.38) and was slightly attenuated in Model 4, which additionally adjusted for BMI (aPR = 1.15, 95% CI: 1.04–1.27).

Table 2. Prevalence ratios of hypertension by race/ethnicity and acculturation category: NHANES 2011–2016

Acculturation proxy score category ^a	Prevalence ratio (95% CI)			
	Model 1 ^b	Model 2 ^c	Model 3 ^d	Model 4 ^e
A. Latinos				
High	1.28 (1.15–1.42)	1.19 (1.09–1.30)	1.25 (1.13–1.38)	1.15 (1.04–1.27)
Medium	1.56 (1.36–1.78)	1.03 (0.92–1.14)	1.04 (0.92–1.16)	1.00 (0.90–1.12)
Low	—	—	—	—
B. Asians				
High	1.34 (1.15–1.57)	1.21 (1.05–1.40)	1.27 (1.08–1.50)	1.20 (1.03–1.39)
Medium	1.52 (1.35–1.70)	1.07 (0.97–1.19)	1.10 (0.98–1.23)	1.08 (0.97–1.21)
Low	—	—	—	—

Abbreviations: CI, confidence interval; NHANES, National Health and Nutrition Examination Survey.

^aAcculturation categories: high: 4, 5; medium: 2, 3; low: 0, 1 on acculturation proxy scale.

^bCrude model.

^cAdjusted for age and gender.

^dAdjusted for Model 2 covariates, income, education, marital status, and health insurance.

^eAdjusted for Model 3 covariates, body mass index.

Asian Americans

The majority of Asian Americans were younger than 65 years old (85.9%) and were born outside of the United States (86.1%). More than half (57.1%) spoke a language other than English at home. Over half of Asians (52.6%) had earned a college degree or more. Among Asians, 26.7% scored a 4 or 5 on the acculturation scale (range 0–5). Hypertension prevalence was higher among Asian men (43.0%) compared with women (34.3%).

As described in Table 2, in the unadjusted model, Asian Americans with high acculturation were 34% more likely than Asians with low acculturation to have hypertension (PR = 1.34, 95% CI: 1.15–1.57). This effect was slightly attenuated after adjusting for age, gender, and SEP (aPR = 1.27, 95% CI: 1.08–1.50). In a model additionally adjusting for BMI, the effect size was slightly attenuated (aPR = 1.20, 95% CI: 1.03–1.39).

Interaction results

Our interest in examining the intersection of acculturation and gender on hypertension prevalence (P for interaction = 0.001 among Latinos and 0.03 among Asians) is presented in Table 3 and Figure 1. Results from the joint effects model (Table 3) showed that compared with Latino women with low acculturation, Latino men with high acculturation were 1.74 times

more likely to have hypertension (aPR = 1.74, 95% CI: 1.49–2.03), after adjusting for age, education, income, marital status, and health insurance status. Similarly, Asian American men with high acculturation scores were 1.79 times more likely to have hypertension compared with Asian American women with low levels of acculturation (aPR = 1.79, 95% CI: 1.42–2.25).

Table 3. Joint effects of acculturation proxy group and gender on hypertension risk among Latinos and Asians: NHANES 2011–2016

Race/ethnicity acculturation group	Women			Men	
	<i>N</i> with/without HTN	Prevalence ratio comparing female acculturation groups to female low acculturation group	<i>N</i> with/without HTN	Prevalence ratio comparing male acculturation groups to female low acculturation group	Prevalence ratio comparing male to female within strata of acculturation proxy groups
Latino					
Low	156/382	Ref	183/298	1.32 (1.06, 1.65)	1.32 (1.06, 1.65)
Medium	237/504	1.12 (0.93, 1.34)	255/433	1.28 (1.08, 1.50)	1.14 (0.99, 1.32)
High	304/589	1.16 (0.97, 1.39)	354/354	1.74 (1.49, 2.03)	1.50 (1.35, 1.66)
Asian American					
Low	110/298	Ref	173/221	1.63 (1.38, 1.94)	1.63 (1.38, 1.94)
Medium	133/248	1.28 (1.06, 1.54)	160/212	1.60 (1.31, 1.96)	1.25 (1.08, 1.46)
High	122/175	1.53 (1.17, 2.01)	128/139	1.79 (1.42, 2.25)	1.16 (0.97, 1.40)

Note: Models are adjusted for age, education, income, marital status, and health insurance status. Joint effects models were run separately for each racial/ethnic group.

Abbreviations: HTN, hypertension; NHANES, National Health and Nutrition Examination Survey.

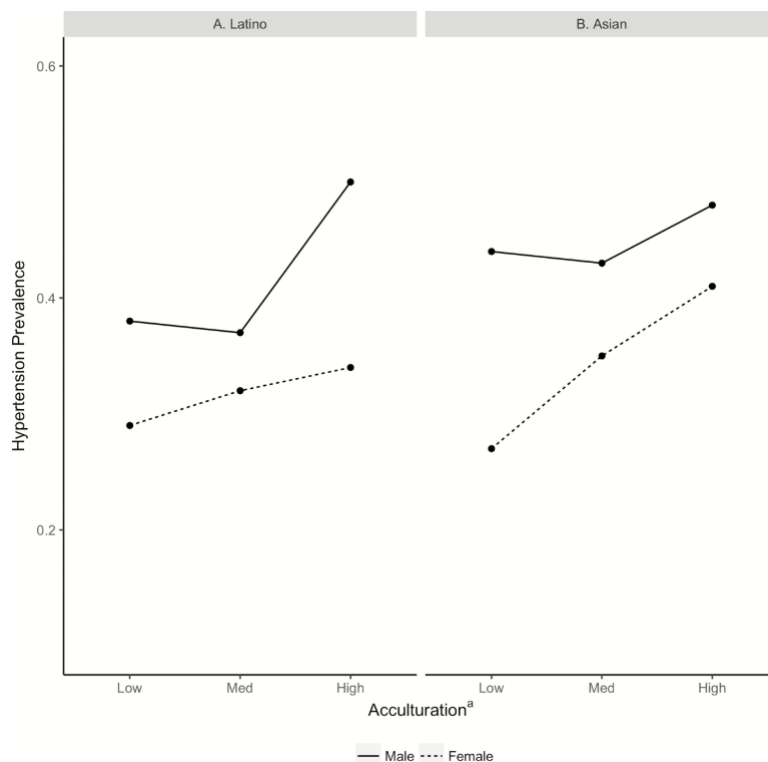


Figure 1. Prevalence of hypertension with increasing acculturation proxy score among Latinos (a) and Asians (b). Adjusted for age, income, education, marital status, and health insurance status. ^aAcculturation proxy categories: low: 0, 1; medium: 2, 3; high: 4, 5 on acculturation proxy scale.

Figure 1 graphically displays patterns in hypertension prevalence by acculturation and gender for both Latinos and Asian Americans. Hypertension prevalence was systematically higher for men compared with women at all levels of acculturation for both Latinos and Asian Americans. However, there was a strong steep trend of increasing hypertension with increasing acculturation among Latino men that was not evident among Asian American men. Among Latino men, 50% with high acculturation had hypertension compared with 38% with low acculturation (aRD = 12.0%, $P < 0.001$). This trend was less pronounced and not statistically significant among Latino women (aRD = 5.0%, $P = 0.09$). In contrast, among Asian American men, hypertension increased modestly across acculturation levels, rising from 44% among those with low acculturation to 48% among those with high acculturation (aRD = 4.0%, $P = 0.25$). Among Asian American women, however, there was a much steeper increase in hypertension prevalence increasing from 27% among those with low acculturation to 41% among Asian women with high acculturation (aRD = 14.0%, $P = 0.003$).

DISCUSSION

This study investigated associations between acculturation and hypertension, a leading risk factor for cardiovascular disease in the 2 largest immigrant groups in the United States⁵ and examined whether gender modified this association. In models adjusted for age, gender, and SEP, Latinos and Asian Americans with high levels of acculturation were 25% and 27% more likely to have hypertension, respectively, compared with respondents with the lowest level of acculturation. When examining the intersection of acculturation and gender on hypertension prevalence, the pattern of increasing hypertension prevalence with increasing acculturation was more strongly evident among Latino men and Asian women.

Our results are consistent with prior literature demonstrating increased risk for hypertension among immigrants with increasing acculturation.^{9,10,12–14,25} However, our study extends prior research by investigating differences in hypertension across multiple social determinants, including race/ethnicity and gender, using an intersectionality framework to guide our study questions.^{16,23,26} To our knowledge, only a few other studies have examined differences in hypertension risk by acculturation and gender among multiethnic^{9,12} and Latino samples,¹⁴ and no study has explored the potential intersection of socially defined experiences of race/ethnicity and gender in producing inequalities in hypertension prevalence. Prior research has suggested that migration can result in varying health patterns for men and women via influences such as health and social policies, health selection, and patterns of SEP in both receiving and sending countries, and immigration scholars have long called for more work that explicitly connects theoretical frameworks to public health research.²⁷ In this regard, we used a pragmatic approach to explore intersectionality theory²⁸ and categorized individuals according to their joint exposure status on acculturation and gender showing varying results across groups.

Why might acculturation and gender differentially pattern hypertension for Latinos and Asian Americans? One potential explanation is that a composite score integrating language, nativity, and years in the United States may have better captured “acculturation” processes specific to each racial/ethnic group. For example, Asians are a relatively newer immigrant group in the United States with more than 70% of the population being foreign-born compared with 40% of

Latinos. However, there is wide variability in limited English proficiency and linguistic isolation by subgroup.²⁹ Given inconsistencies observed in prior research based on the acculturation measure applied,³⁰ our use of a multi-item score may have uncovered health patterns specific to Latinos and Asians. A second and related explanation is that it captured what intersectionality theory suggests: variation in health due to the multiple social positions individuals experience. It is possible that men and women from immigrant groups adopt health behaviors (e.g., diet or physical activity) in different ways as they integrate into US society depending on the places in which they settle and the level of integration (acceptance) they experience, resulting in the varying hypertension patterns we observed by acculturation and gender. Moreover, characteristics of the country of origin, such as educational and workforce opportunities, and patterns in health behaviors, can also shape the health of populations that migrate to the United States and thus lead to differing health effects.^{16,31} Lastly, research suggests that the embodiment of stress processes may differ for men and women,^{32,33} and our results suggest that Asian American women and Latino men with increasing acculturation may be particularly vulnerable to hypertension. Future studies are needed that build on our conceptual and analytic approach to confirm whether they hold in other samples of Latinos and Asians, and other immigrant-origin groups. Given the complex nature of migration-related processes in conjunction with gender, qualitative studies would provide an in-depth understanding of how and why acculturation shapes health differently for men and women of immigrant origin. Furthermore, gender-based theoretical frameworks may help guide future research, given that gender roles and family dynamics may interplay with acculturation process.³⁴

Additionally, in this and prior studies, the prevalence of obesity, a risk factor for hypertension, is higher among Latinos than Asian adults; however, Asians get hypertension at lower BMI categories than other groups.³⁵ In this analysis, Model 4 added BMI as a covariate, and the effect size decreased with the addition of BMI among both Asians and Latinos. Furthermore, we tested whether the effect size changed among Asian Americans when using lower BMI cutoff points for overweight and obesity for this group, as suggested by recent guidelines³⁶; however, the results were similar when using standard BMI categories. These results suggest that BMI may be a pathway through which acculturation affects hypertension risk among both groups. The patterning of BMI (and other risk factors for hypertension) with increasing acculturation, however, likely differs by both race/ethnicity and gender. Future research that explicitly explores the mediating risk factors for hypertension with increasing acculturation, particularly studies that explore differences by both race/ethnicity and gender, will help inform more targeted interventions to reduce the risk of hypertension among Asians and Latinos.

This study is not without limitations. Because NHANES is cross-sectional, we are not able to demonstrate that increasing years in the United States is prospectively associated with hypertension, limiting causal interpretation of our observed associations. Asian and Latino immigrants are diverse populations, hailing from a wide range of origin countries and with varying levels of education, income, and place of residence. Thus, the relationship between acculturation and hypertension may also differ by racial/ethnic subgroup as demonstrated in previous studies among Latinos¹¹; however, racial/ethnic group data are not available in NHANES. Similarly, the sample size for some of our acculturation-gender groups was small, and caution is warranted when interpreting these findings. Additionally, the measures of acculturation used in this analysis are proxy measures and do not capture the dynamic, nonlinear

effects of integration that immigrant groups experience at any single point in time or over the life course. More detailed and continuous measures of acculturation may have also shown associations with hypertension risk, beyond what we could show with 3 categories. This limitation is offset by the strength of this study being among a nationally representative sample and because it is common practice to collapse continuous measures into categories to ease interpretation.³⁷ Lastly, place of residence (e.g., neighborhoods) is important determinant of health, and some evidence has shown that select health behaviors and cardiovascular risk factors can differ for Latino and Asian American groups living in the same neighborhood contexts.³⁸ Research is needed that incorporates place-based, life course effects for immigrant populations and their descendants.

A clear strength of this study is the focus on 2 fast-growing segments of the US population. We applied analytic methods to examine how fundamental tenets of intersectionality theory relate to a cardiovascular risk factor and used objective measures of hypertension. The findings suggest that reducing hypertension requires considering how gendered and immigrant-related processes increase vulnerability to hypertension and the salience of broader social structures shaping the health of these communities.

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DISCLOSURE

The authors declared no conflict of interest.

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